

Time Switch



A time switch (also called a timer switch) is an electrical device that automatically turns a circuit or appliance on and off at specific times. Unlike a standard timer that begins a countdown from the moment it is activated, a time switch operates based on the actual time of day.

- Main Types of Time Switches:

1. Mechanical (Analog) المؤقت التناظري:

Uses a rotating dial with pins or "tappets." Each pin typically represents a 15-minute interval; pushing them in or out determines when the device is on or off.

2. Digital (Electronic) المؤقت الرقمي:

Features an LCD display and programmable buttons. These allow for high precision and multiple schedules, such as different settings for weekdays versus weekends.

3. Astronomical المؤقتات الفلكية:

Automatically calculates sunrise and sunset times based on your geographical location. These are primarily used for outdoor lighting to ensure lights only turn on when it is dark.

4. Smart/IoT المؤقت الذكي / إنترنت الأشياء:

Can be controlled via smartphone apps or voice assistants. These often include features like energy monitoring and remote manual overrides.

- Common Applications:

1. Residential:

Controlling pool pumps, water heaters, and interior/ exterior lighting for security and energy savings.

Commercial: Automating illuminated signs, HVAC systems, and storefront lighting.

2. Industrial:

Managing production line sequences and irrigation systems.

Benefits

3. Energy Efficiency:

Reduces electricity costs by ensuring devices only run when needed.

4. Security:

Mimics occupancy by turning lights on and off in patterns while you are away.

5. Convenience:

Automates repetitive tasks, such as brewing coffee in the morning or activating sprinklers.

By: Haytham Zeidan

Resources:

https://en.wikipedia.org/wiki/Time_switch

<https://sawiat.com/the-difference-between-digital-timer-and-analog-timer/>

<https://www.aliontimer.com/ar/astronomical-photocell-timer-switch-difference/>

<https://www.geya.net/ar/astronomic-timer-switch-guide/>

<https://www.scribd.com/presentation/866399252/PPT-Smart-Switch-Using-IOT>

<https://www.amazon.in/EuroControls-Smartphone-Retrofit-Countdown-Programming/dp/B081TGGF82>